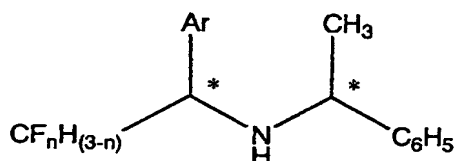


CLAIMS

1. A method for producing an optically active 1-aryl-2-fluoro-substituted ethylamine compound of the formula [2] or a salt thereof by hydrogenolysis of an optically active secondary amine compound of the formula [1] or a salt thereof in the presence of a transition metal catalyst of Group VIII

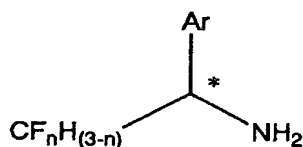
[Chem. 32]



[1]

[where Ar represents an aryl group; n represents an integer of 1 or 2; and * represents an asymmetric carbon]

[Chem. 33]

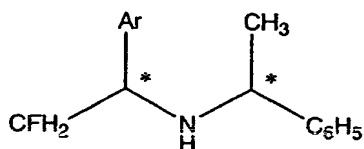


[2]

[where Ar represents an aryl group; n represents an integer of 1 or 2; and * represents an asymmetric carbon].

2. A method of producing an optically active 1-aryl-2-fluoro-substituted ethylamine compound of the formula [4] or a salt thereof by hydrogenolysis of an optically active secondary amine compound of the formula [3] or a salt thereof in the presence of a palladium catalyst

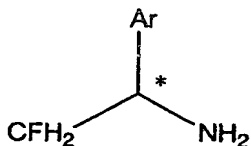
[Chem. 34]



[3]

[where Ar represents an aryl group; and * represents an asymmetric carbon]

[Chem. 35]

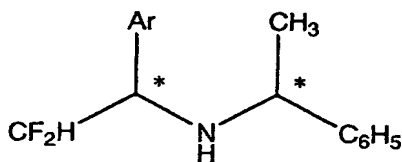


[4]

[where Ar represents an aryl group; and * represents an asymmetric carbon].

3. A method of producing an optically active 1-aryl-2-fluoro-substituted ethylamine compound of the formula [6] or a salt thereof by hydrogenolysis of an optically active secondary amine compound of the formula [5] or a salt thereof in the presence of a palladium catalyst

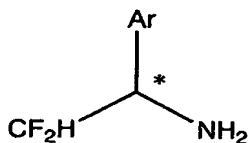
[Chem. 36]



[5]

[where Ar represents an aryl group; and * represents an asymmetric carbon]

[Chem. 37]



[6]

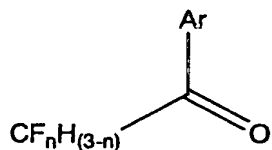
[where Ar represents an aryl group; and * represents an asymmetric carbon].

4. The method according to Claim 1, wherein the optically active secondary amine compound of the formula [1] is obtained by the steps of:

preparing an optically active imine of the formula [9] by dehydration condensation of a fluoro-substituted methyl aryl ketone of the formula [7] and an optically active 1-phenylethylamine of the formula [8] in the presence of an acid

catalyst

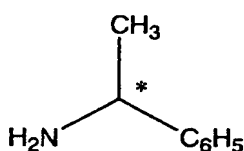
[Chem. 38]



[7]

[where Ar represents an aryl group; and n represents an integer of 1 or 2]

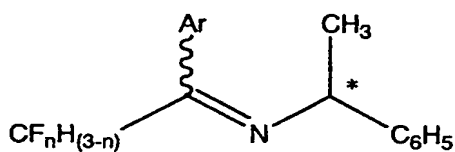
[Chem. 39]



[8]

[where * represents an asymmetric carbon]

[Chem. 40]

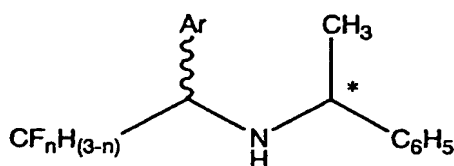


[9]

[where Ar represents an aryl group; n represents an integer of 1 or 2; * represents an asymmetric carbon; and the wavy line represents E configuration or Z configuration];

preparing an optically active secondary amine of the formula [10] in the form of a mixture of diastereomers by asymmetric reduction of the optically active imine

[Chem. 41]



[10]

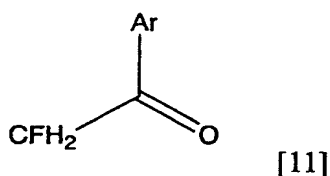
[where Ar represents an aryl group; n represents an integer of 1 or 2; * represents an

asymmetric carbon; and the wavy line represents a mixture of diastereomers];
 deriving a salt from the mixture of diastereomers of the optically active secondary amine; and
 purifying the salt by recrystallization.

5. The method according to Claim 2, wherein the optically active secondary amine of the formula [3] is obtained by the steps of:

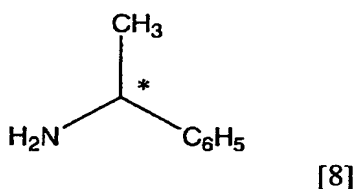
preparing an optically active imine of the formula [12] by dehydration condensation of a fluoro-substituted methyl aryl ketone of the formula [11] and an optically active 1-phenylethylamine of the formula [8] in the presence of an acid catalyst

[Chem. 42]



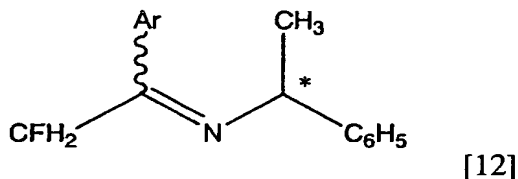
[where Ar represents an aryl group]

[Chem. 43]



[where * represents an asymmetric carbon]

[Chem. 44]

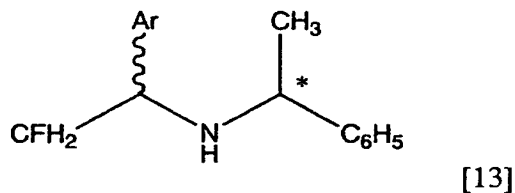


[where Ar represents an aryl group; * represents an asymmetric carbon; and the wavy line represents E configuration or Z configuration];

preparing an optically active secondary amine of the formula [13] in the

form of a mixture of diastereomers by asymmetric reduction of the optically active imine with a hydride reducing agent

[Chem. 45]



[where Ar represents an aryl group; * represents an asymmetric carbon; and the wavy line represents a mixture of diastereomers];

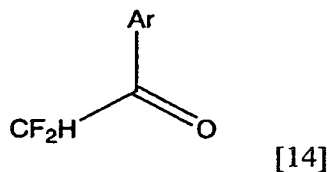
deriving a salt from the mixture of diastereomers of the optically active secondary amine; and

purifying the salt by recrystallization.

6. The method according to Claim 3, wherein the optically active secondary amine of the formula [5] is obtained by the steps of:

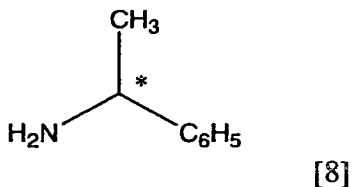
preparing an optically active imine of the formula [15] by dehydration condensation of a fluoro-substituted methyl aryl ketone of the formula [14] and an optically active 1-phenylethylamine of the formula [8] in the presence of an acid catalyst

[Chem. 46]



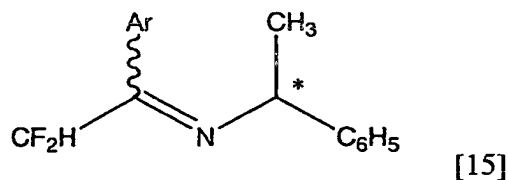
[where Ar represents an aryl group]

[Chem. 47]



[where * represents an asymmetric carbon]

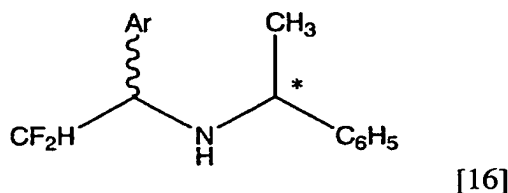
[Chem. 48]



[where Ar represents an aryl group; * represents an asymmetric carbon; and the wavy line represents E configuration or Z configuration];

preparing an optically active secondary amine of the formula [16] in the form of a mixture of diastereomers by asymmetric reduction of the optically active imine with a hydride reducing agent

[Chem. 49]



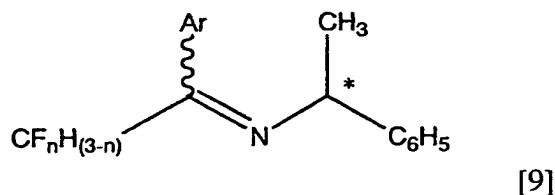
[where Ar represents an aryl group; * represents an asymmetric carbon; and the wavy line represents a mixture of diastereomers];

deriving a salt from the mixture of diastereomers of the optically active secondary amine; and

purifying the salt by recrystallization.

7. An optically active imine of the formula [9]

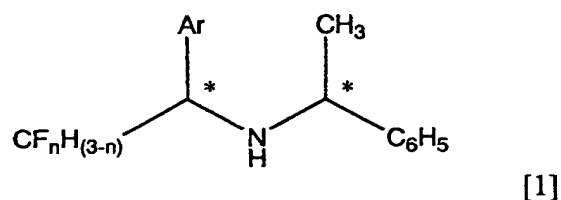
[Chem. 50]



[where Ar represents an aryl group; n represents an integer of 1 or 2; * represents an asymmetric carbon; and the wave line represents E configuration or Z configuration].

8. An optically active secondary amine compound of the formula [1] or a salt thereof

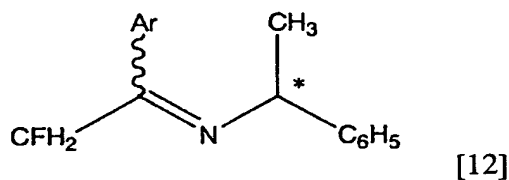
[Chem. 51]



[where Ar represents an aryl group; n represents an integer of 1 or 2; and * represents an asymmetric carbon].

9. An optically active imine of the formula [12]

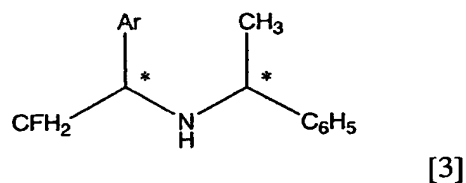
[Chem. 52]



[where Ar represents an aryl group; * represents an asymmetric carbon; and the wave line represents E configuration or Z configuration].

10. An optically active secondary amine compound of the formula [3] or a salt thereof

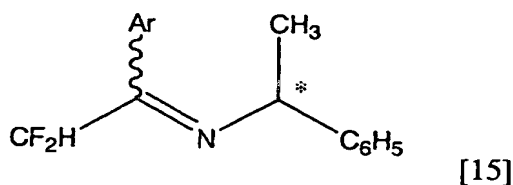
[Chem. 53]



[where Ar represents an aryl group; and * represents an asymmetric carbon].

11. An optically active imine of the formula [15]

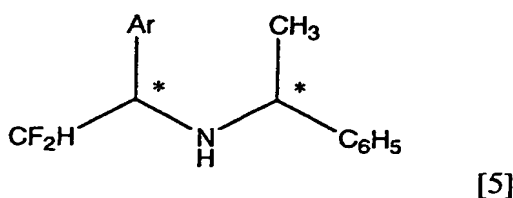
[Chem. 54]



[where Ar represents an aryl group; * represents an asymmetric carbon; and the wave line represents E configuration or Z configuration].

12. An optically active secondary amine compound of the formula [5] or a salt thereof

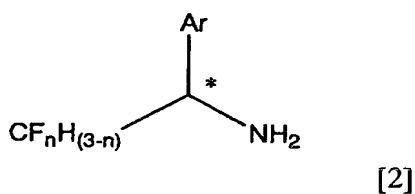
[Chem. 55]



[where Ar represents an aryl group; and * represents an asymmetric carbon].

13. An optically active 1-aryl-2-fluoro-substituted ethylamine compound of the formula [2] or a salt thereof

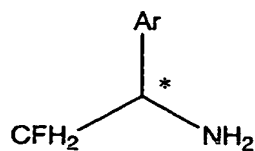
[Chem. 56]



[where Ar represents an aryl group; n represents an integer of 1 or 2; and * represents an asymmetric carbon].

14. An optically active 1-aryl-2-fluoro-substituted ethylamine compound of the formula [4] or a salt thereof

[Chem. 57]

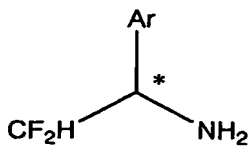


[4]

[where Ar represents an aryl group; and * represents an asymmetric carbon].

15. An optically active 1-aryl-2-fluoro-substituted ethylamine compound of the formula [6] or a salt thereof

[Chem. 58]



[6]

[where Ar represents an aryl group; and * represents an asymmetric carbon].